

REMARKS

Claims 1-35 were pending in the subject application. Claims 1-14 were cancelled as pertaining to nonelected subject matter. Claim 26 was cancelled as redundant in view of the amendment to claim 1. Claim 35 was cancelled in view of the amendment to claim 29. Upon entry of the foregoing amendments claims 15-25 and 27-34 will be before the Examiner for consideration.

The Examiner notes that the specification had not yet been amended to include the information of the provisional application to which the present application claimed priority. The specification has been amended above. Reconsideration is requested.

Drawings

The Examiner raises the issue concerning whether the drawings are informal or formal. Applicants point out that the drawings pertain, in large part, to photographs of gels and blots. Some of the drawings are diagrams and graphs. Applicants assert that the drawings as should be considered formal. If there are any issues with any specific drawings, Applicants ask that the Examiner point these out. Applicants will be happy to present replacement drawings if necessary. However, without knowing what if any problems exist in the drawings, Applicants believe that they cannot properly respond to the drawings objection. Applicants request that fair notice of any issues be given, or otherwise withdraw the rejection in view of the foregoing remarks.

Claim objections

Claims 34 and 26 were objected due to a misspelled word. These claims have been amended to correct this misspelling. Reconsideration is requested.

Sequence Listing

Sequences on page 16 of the present application were said to not include correlating sequence identifiers. Paragraph 086 has been amended above to properly cite to the SEQ ID Nos pertaining to the stated sequences. Reconsideration is requested.

112, second paragraph rejections

Claims 18-35 have been rejected under 35 USC § 112, second paragraph, based on indefiniteness. Applicants believe that the numerous amendments to the claims

above address each of the stated bases of this rejection. Applicants respectfully request reconsideration.

Enablement

Claims 15-35 are rejected under for lacking enablement. Applicants believe that the amendments to claims 15 and 29 obviate the grounds for this rejection. Claims 15 and 29 have been amended to recite that the aspartate decarboxylase comprises at least 80 percent sequence identity to SEQ ID NO. 2. One skilled in the art would be able to determine sequences meeting this limitation, make them, and test them for their activity (see paragraph 093 of the present specification). While this might require some experimentation, such exercise is well documented in the field of molecular biology, and is rather routine. Such exercise would not fall under the category of undue. Moreover, claims 16-28 and claims 30-34 depend from claims 15 and 29, respectively, and are therefore construed to contain the limitations of such independent claims. These dependent claims should also be considered enabled. In view of the foregoing remarks and amendments, Applicants respectfully request reconsideration of this rejection.

Written Description

Claims 15-35 are rejected under 35 USC § 112, first paragraph, as they are said to lack written description. Applicants believe that the amendments to claims 15 and 29 obviate the basis of this rejection. Claims 15 and 29 have been amended to recite that the aspartate decarboxylase comprises at least 80 percent sequence identity to SEQ ID NO. 2. One skilled in the art would readily appreciate and understand that sequences having such close identity with the model sequence can be determined in light of the general understanding in the art and/or the assistance of peer wise comparison programs such as best fit or gap widely known and used in the art. Furthermore, this language used in claims 15 and 29 is in line with the written description examination guidelines provided by the U. S. Patent Office. See Example 11 of the "New Written Description Training Materials". Moreover, claims 16-28 and claims 30-34 depend from claims 15 and 29, respectively, and are therefore construed to contain the limitations of such independent claims. These dependent claims should also be considered to satisfy the written description requirement. In view of the foregoing remarks and amendments, Applicants respectfully request reconsideration of this rejection.

Novelty

Claims 15-20 and 29 are rejected under 35 USC § 102(e), as it is alleged that they are anticipated by the Pompejus et al. patent (US Patent No. 6696561, '561 patent). It is said that the '561 patent teaches a plant transformed with a sequence

encoding aspartate decarboxylase. Applicants respectfully traverse. A careful review of the '561 patent reveals that it does not teach the transformation of a plant with a sequence encoding aspartate decarboxylase. First of all, Applicants urge that it is not even clear whether Table 2 of the '561 patent teaches a sequence encoding aspartate decarboxylase. However, even if it does, the '561 patent makes clear that the sequences taught therein do not pertain to the sequences of the invention in the '561 patent. Particular attention is drawn to col 18, lines 45-48, which states, "the nucleic acid molecules of the present invention are not intended to include those compiled in Table 2." emphasis added. This teaching is reemphasized at col. 20, lines 54-60 of the '561 patent. Thus, one skilled in the art is actually taught away from transforming a cell with sequences contained in Table 2. As such, the '561 patent does not teach all of the elements of the independent claims 15 and 29. In addition, claims depending upon these independent claims set forth additional distinguishing features of the '561 patent. In view of the foregoing remarks, Applicants respectfully assert that the claims are not anticipated by the '561 patent. Reconsideration of this rejection is requested.

Obviousness

Claims 15-35 are rejected under 35 USC § 103(a) as being obvious over Jones et al., in view of the Goodman. Applicants respectfully traverse. The office action admits that the Jones reference does not teach plant transformation. It is cited for the purpose of attempting to establish that the aspartate decarboxylase gene was known. The secondary Goodman reference is cited for purpose of establishing that plant transformation was known as of the time of filing the present application. Applicants do not refute this proposition. Applicants need not comment on whether the aspartate decarboxylase gene was known and or whether the Jones reference teaches such sequence. Applicants believe that even assuming, for the sake of argument, that the Jones reference does teach the aspartate decarboxylase gene, that the rejected claims should not be considered obvious in view of a combination of Jones with Goodman.

The rejection appears to distill down to the rudimentary point that the aspartate decarboxylase gene was known and the plant transformation was known. Therefore, any known protein expressed in plants is obvious. Applicants take great issue with this position. The construction of a vector for transfecting plants and that properly integrates into the plastid genome is only a first, but fundamental, step in the effort to express a never before expressed protein in plants. Expressing a foreign protein and protection from degradation, proper folding, etc. is a challenge with each new protein expressed in plants. Also, it should be pointed out that even if the foreign protein is properly expressed, it may be toxic to the plant or cause sterility.

Survival of transgenic plants after foreign gene expression with normal growth and reproduction capabilities is a new challenge for each protein. Furthermore, the amount of work that goes into successfully constructing a new vector; transforming cells, selecting for cells, identifying whether a given protein is expressed and then determining whether such protein is active is labor intensive, requires a great amount of skill, and is fraught with failures before successes. It cannot be reasonably asserted that just because one protein is known, that a sequence encoding such protein for plants will successfully integrate and express the protein, and also that the protein will properly fold and be appropriately processed to produce active protein. Thus, Applicants assert that a combination of the Jones and Goodman references would not establish an expectation of success to one skilled in the art. On this basis alone, the cited references do not reasonably support a prima facie case of obviousness.

In addition, the remarkable results that the Applicants observed with respect to the robustness and heat, drought and salt tolerance of the plants that were transformed to express the recited amino acid sequences were quite surprising. These unexpected results represent a strong secondary characteristic of patentability and further bolster Applicants position that the combination of the cited references do not render the claims obvious. Accordingly, in view of the foregoing remarks, Applicants respectfully request reconsideration of this rejection.

Having addressed the issues raised in the last office action, Applicant urges that the present application is in a condition for allowance. Applicant requests that the undersigned be contacted to arrange an interview should the Examiner be of the opinion that issues still exist preventing allowance of the application.

Respectfully submitted,

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